

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 84079

Wednesday, May 02, 2012 1:06:55 PM

84079

Page 2

Item ID: D3690-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Glareshield

Start Date: 5/2/2012 Start Qty: 4.00

4

Cust Item ID:

Required Date: 5/8/2012 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
115		0.00							
115	Dry Material					x4			DL 12/06/14
HandThermo	Memo	0.00							
Hand Finishing Thermoforming	Dry Sheet as per QSI022 POLYCARBONATE								
	Temp: 240°F								
	Time IN: 7:00 pm 12/06/13								
	Time OUT: 7:00 am 12/06/14								
120		0.00							
120	THERMOFORMING MACHINE					x4			DL 12/06/14
Thermoform	Memo	0.00							
Thermoforming Machine	Thermoform as per Dwg. D3690-1 and Folio FTA 019 Dwg. Rev.								
	<u>C</u> Folio Rev. <u>C</u>								
130		0.00							
130	QC2- Inspect parts off machine FAI/FAIR					x4			DL 12/06/14
QC	Memo	0.00							
Quality Control	Visually inspect for proper formation of each part								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 84079***84079***

Page 3

Wednesday, May 02, 2012 1:06:55 PM

Item ID: D3690-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Glareshield

Start Date: 5/2/2012 Start Qty: 4.00

4

Cust Item ID:

Required Date: 5/8/2012 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC8- Inspect parts - second check	0.00							
140						X4			B 12/04/14
QC	Memo	0.00							
Quality Control									
150		0.00							
150	HAND FINISHING THERMOFORMING					X4			DL
Thermoform	Memo	0.00							17/06/20
Thermoforming Machine	Trim to Finished Dimensions as per dwg D3690 using DT9036 / DT9043 template								
160	QC2- Inspect parts off machine FAI/FAIB	0.00							
160						X4			DL
QC	Memo	0.00							17/06/20
Quality Control	Check dimensions to ensure conformity to drawing tolerances.								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 84079

84079

Page 4

Wednesday, May 02, 2012 1:06:55 PM

Item ID: D3690-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Glareshield
 Start Date: 5/2/2012 Start Qty: 4.00 *4* Cust Item ID:
 Required Date: 5/8/2012 Req'd Qty: 4.00 *4* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170 *170* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							
180 *180* Packaging Packaging	Identify as per dwg & Stock Location: <u>GA</u> Memo	0.00 0.00				4			SA 12/07/16
190 *190* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							12/17/17 MF 12-07-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, May 02, 2012 1:06:59 PM

Page 1

Work Order ID: 84079

84079

Parent Item: D3690-1

D3690-1

Parent Item Name: Glareshield

Start Date: 5/2/2012

Required Date: 5/8/2012

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev A New Issue 08/04/28 DL verified by:DD
 IPP Rev:B 08-07-14 revB as per dwg DD verified by:ec
 IPP Rev:C 08-10-07 revC as per dwg DD verified by:EC Ipp Rev. D
 Add Step 115 Dry Material 10/04/21 DL

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MLEXS.093-F6006-02		Purchased			No		sf	272.7275		105.2926			

MI FXS 093-F6006-02
 GE PLASTICS LEXAN SHEET

**

Location

Loc Qty

Loc Code

therm

272.7274879

106751

97.9159079

110877

174.81158

B 122033

105.30 sq ft

Whc
 12/06/20

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	<i>84079</i>
Description: Glareshield		Part Number:	D3690-1
Inspection Dwg: D3690 Rev: C		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Shape Definition	✓			
Free of visual flaws (bumps, cracks, voids, etc.)	✓			

Measured by: <i>DL</i>	Date: <i>12/06/14</i>
-------------------------------	------------------------------

TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
2.20	+/-0.030	<i>2.23</i>	✓			
3.55	+/-0.030	<i>3.58"</i>	✓			
0.040	Min	<i>0.0494</i>	✓			

Measured by: <i>DL</i>	Date: <i>12/06/20</i>
Audited by: <i>JB</i>	Date: <i>12/06/20</i>
Preliminary Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	08.09.12	New Issue	KJ/DL	<i>DL</i>
B	10.11.17	Dwg Rev updated	KJ	<i>DL</i>

Dart Aerospace Ltd

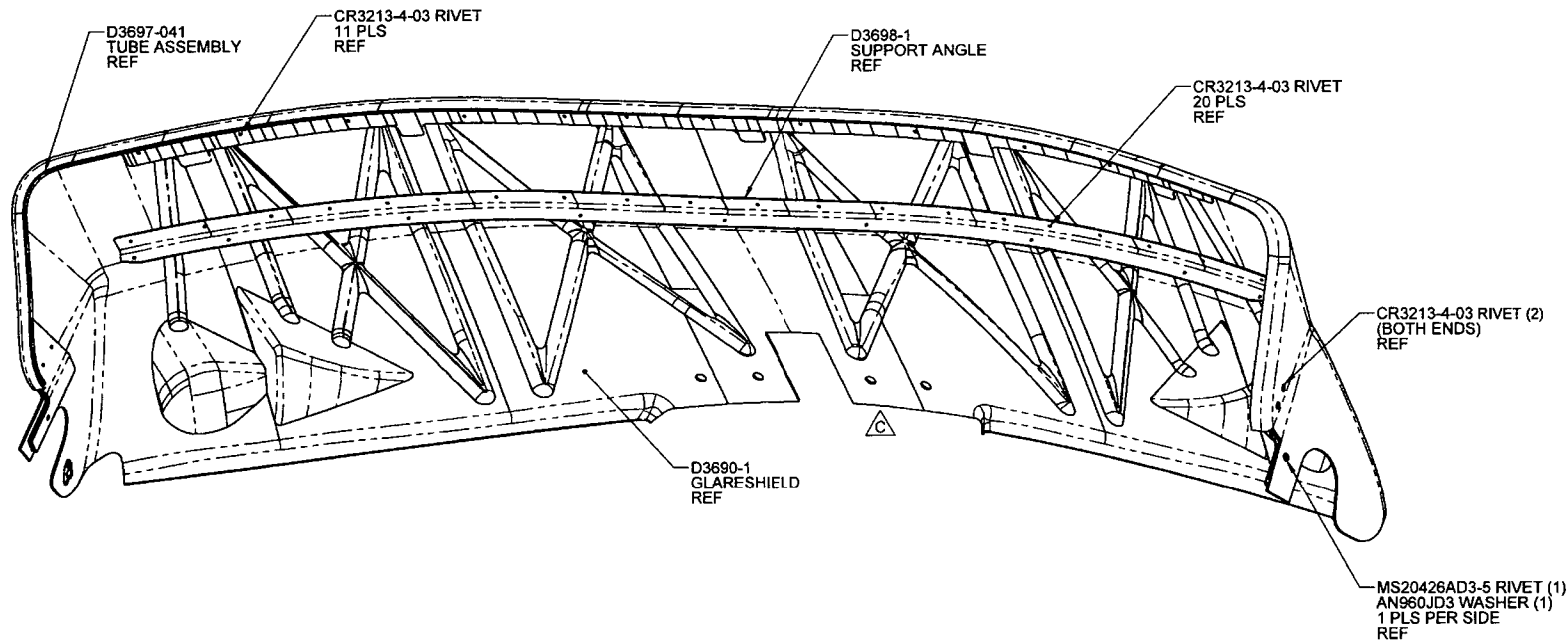
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



PART LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3690-041	GLARESHIELD ASSEMBLY
1	D3690-1	GLARESHIELD
1	D3697-041	TUBE ASSEMBLY
1	D3698-1	SUPPORT ANGLE
2	AN960JD3	WASHER (OR NAS1149DN332J)
2	MS20426AD3-5	RIVET
35	CR3213-4-03	RIVET

D3690-041 GLARESHIELD ASSEMBLY

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 841079

RELEASED
28-09-16/17

C	SHEET 1 PL MS20426AD3-5 RIVET WAS MS20426AD3-4, CR3213-4-03 RIVET WAS MS20470AD3-4, WASHER QTY WAS 6 (VIEWS UPDATED ACCORDINGLY). RIVETS ON SHEET 1 CHANGED TO REF QTY. RIVETS ON SHEET 2 CHANGED TO "HARD" CALLOUTS. SHADING REMOVED FROM ALL VIEWS FOR CLARITY.		AJS	08.09.02
	B		RF	08.06.24
A	NEW ISSUE		RF	08.05.26
REV.	DESCRIPTION		BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	RF			
CHECKED	<i>[Signature]</i>	DRAWING NO. D3690		REV. C
MFG. APPR.	<i>[Signature]</i>	TITLE		SHEET 1 OF 3
APPROVED	<i>[Signature]</i>	SCALE		NTS
DE APPR.	<i>[Signature]</i>	GLARESHIELD ASSEMBLY		
DATE	08.09.02		COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

112-05-2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

TRANSFER DRILL $\phi 0.128$
FROM D3698-1 TO D3690-1
INSTALL
CR3213-4-03 RIVET, 20 PL
RIVET HEAD ON GLARESHIELD
OUTSIDE SURFACE

D3690-1
GLARESHIELD
REF

TRANSFER DRILL $\phi 0.098$
FROM D3697-041 TO D3690-1
INSTALL
MS20426AD3-5 RIVET
AN960JD3 WASHER (ON GLARESHIELD
OUTSIDE SURFACE)
1 PER SIDE

TRANSFER DRILL $\phi 0.128$
FROM D3697-041 TO D3690-1
INSTALL
CR3213-4-03 RIVET 2
BOTH ENDS

D3697-041
TUBE ASSEMBLY
REF

TRANSFER DRILL $\phi 0.144$
AT THIS LOCATION
FROM D3697-041 TO D3690-1
(NO HARDWARE INSTALLED)

D3698-1
SUPPORT ANGLE
REF

TRANSFER DRILL $\phi 0.128$
FROM D3697-041 TO D3690-1
INSTALL
CR3213-4-03 RIVET, 11PL
RIVET HEAD ON GLARESHIELD
OUTSIDE SURFACE

EQUAL DIMENSION
AT BOTH ENDS

SECTION A-A

D3690-041 GLARESHIELD ASSEMBLY

NOTES:

- 1) CENTER D3697-041 AND D3698-1 ON TO D3690-1
- 2) FINISH: PAINT D3690-041 ASSY FLAT BLACK USING BASF GLASURIT 22 LINE CODE SFA39.50 PER DART QSI 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) IDENTIFICATION: ETCH WITH DART P/N D3690-041 & B/N ON INSIDE OF PART
- 5) WEIGHT: 2.98 lbs
- 6) MASK HATCHED AREAS (6 PLS) ON INSIDE OF THE PART PRIOR TO PAINTING

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.	CE	D3690	SHEET 2 OF 3
APPROVED	11/1/02	TITLE	SCALE
DE APPR.	#	GLARESHIELD ASSEMBLY	NTS
DATE	08.09.02	COPYRIGHT © 2008 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

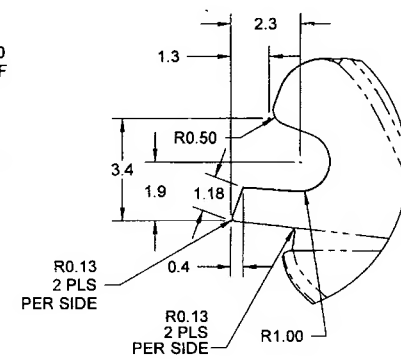
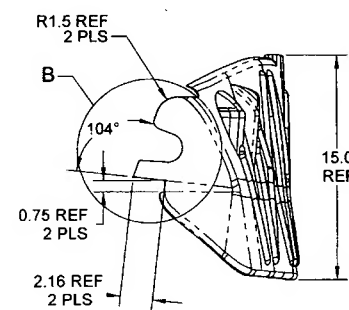
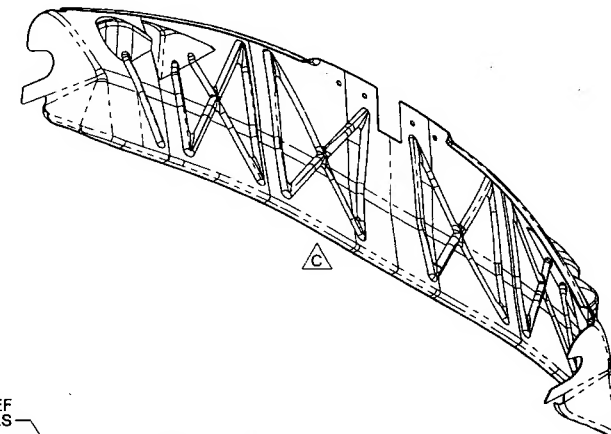
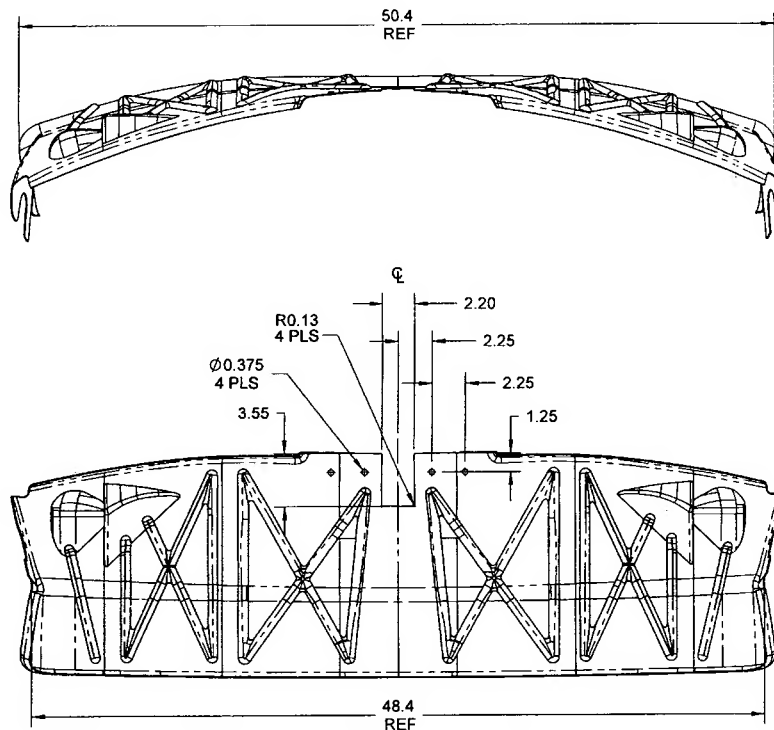
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D3690-1 GLARESHIELD

NOTES:





- 1) MATERIAL: F6006 SUEDE/POLISHED 701 BLACK FLAT LEXAN SHEET 0.093 THICK (REF DART SPEC MLEXS.093-F6006-02)
- 2) TOOLING: THERMOFORM PER MOLD DT9010 PER QSI 022 TRIM PER MOLD SCRIBE LINES EXCEPT WHERE NOTED
- 3) FINISH: NONE
- 4) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 7) IDENTIFICATION: NONE
- 8) WEIGHT: 2.5 lbs
- 9) MINIMUM THICKNESS AFTER FORMING IS 0.040

84079

RELEASED
02-07-14 110

DETAIL B

SCALE 2X
THIS VIEW FOR REFERENCE ONLY

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D3690	SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		GLARESHIELD ASSEMBLY	NTS
DATE	08.09.02	COPYRIGHT © 2008 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries